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ABSTRACT

Intended for teachers of reading on the two-year college level, this journal discusses research on the effects of assignments on recognition memory and research on the Nelson-Denny Reading Test as a predictor of college grades in English and psychology. Articles also deal with methods for teaching developmental reading, a program for training and using paraprofessionals, and accountability assessment for developmental education. A book review of "Surviving in College" by David J. Yarington is included. (MAI)

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[Factors Related to Two-Year College Reading Programs]

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# INPUT SEQUENCE, EXPOSURE, AND MODALITY EFFECTS ON RECOGNITION MEMORY

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An assumption widely held in academic circles is that students learn best from lectures when they have read assignments prior to the class in which that material is presented. A survey of representative texts in the field of college reading and study skills indicates that nearly all authors recommend that assignments should be read before the student attends the lecture.* A quotation from a leading authority and author of one of the most widely used college-level texts may serve as an example:

> Often an instructor's classroom lectures will follow the topics in the order in which they appear in the textbook. By pre-reading your textbook chapters, you will be sufficiently familiar with the material in the lecture so that you can anticipate points and easily follow the development of the topic. (Pauk, 1974).

Previous research (Cashen, et.al., 1975) has indicated that no temporal sequencing effects were observed when college students read and listened to lectures on two Scientific American articles when tested one day following the exposure. The present study was designed to determine whether any difference in results will be obtained when

*See Appendix 1

performance is tested at two different delays. Additionally, the question of input modality efficiency is explored, comparing lectures alone with reading alone. The following specific null hypotheses were tested:

Hypothesis 1: There is no difference in test performance between subjects who read then listen to a lecture and those who listen first then read (sequence effect).

Hypothesis 2: There is no difference in test performance between subjects who only read and those who only listen to a lecture (modality effect).

Hypothesis 3: There is no difference between subjects who receive both forms of input and those who only read or only listen to a lecture (stimulus exposure effect).

All three hypotheses were tested with respect to retention after a 20-minute delay and a 2-day delay. The independent variables under study are:

Input Sequence: Reading then lecture vs. lecture then reading.

Input Modality: Reading alone vs. lecture alone.

Degree of Exposure: Single exposure (reading or lecture) v. double exposure (reading and lecture).

## METHOD

Subjects: The experiment involved forty-three college juniors and seniors enrolled in a Methods of Inquiry evening class at the State University of New York Upper Division College at Utica-Rome. Forty-two students were enrolled in the Nurses Training Curriculum and one student was a Social Science Major. Thirty-eight were female and five were male.

Procedure: Each student was randomly assigned to one of four experimental groups: Read Only (R), Lecture Only (L), Read then Lecture (RL), and Lecture then Read (LR). The experimental design is shown in Table 1.

Table 1

Design of the Experiment

| | Segment* | | | | | |
|---|---|---|---|---|---|---|
| | Monday | | | | | Wednesday |
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Read only | Read | | Test | | | Retest |
| Lecture only | | Lecture | | Test | | Retest |
| Read then Lecture | Read | Lecture | | Test | | Retest |
| Lecture then Read | | Lecture | Read | | Test | Retest |

*All segments were 20 min. long.

The experiment was performed in the regular classroom. Those students not involved in some aspect of the study at any particular time remained in a student lounge located nearby. On a Monday evening all students were introduced to the general experimental procedure and, after group assignments were made, the experiment proceeded in the following 20-minute segments, as summarized in Figure 1.

Segment 1: Groups L and LR left the room while Groups RL and R read a mimeographed copy of "The Effects of Rearing Conditions on Behavior" by Harlow and Harlow (1962).

Segment 2: Group R left the room and Groups RL, L, and LR listened to and participated in a lecture-discussion of the article. The lecture covered all of the factual material and an overview of the implications for child development in humans. Questions were allowed and student discussions were encouraged.

Segment 3: Groups RL and L left, Group R returned and was given a twenty-question multiple-choice examination on the article while Group LR read the article.

Segment 4: Group R was dismissed for the evening, Group LR left the room and Groups RL and R took the test.

Segment 5: Groups RL and L were dismissed while Group LR took the test.

Segment 6: On the following Wednesday, all four groups were given the same test again providing the 2-day delay assessment.

Instrumentation: The test consisted of eighteen four-

answer multiple-choice questions and two true-false questions. Before answering the test questions, the subjects were instructed to estimate the number of questions which they thought they would get correct. The purpose of having them estimate their performance was to determine whether or not differential performance aspirations would result from the treatment conditions. Responses to the twenty questions were indicated by circling the appropriate answer on the answer sheet. Answer sheets were collected along with test booklets.

Operational Definitions: The experiment was concerned with the following three main effects: 1) The sequence effect, involving comparison of subject's test performance when the difference between the two groups of subjects is the order in which they received exposure to the material. One group of subjects (RL) read the material and then participated in the lecture-discussion and another group (LR) received the reverse sequence of exposure. 2) The modality effect, comparing those subjects who received only one input exposure, reading alone (R) or lecture alone (L). 3) The stimulus exposure effect, comparing subjects who received one or the other (R and L). An additional analysis comparing aspirations of each group was based upon the estimated performance prior to test taking. The dependent variable for the three main effects was performance on the test, as indicated by the number of correct responses to the twenty questions. This was assessed after a 20-minute

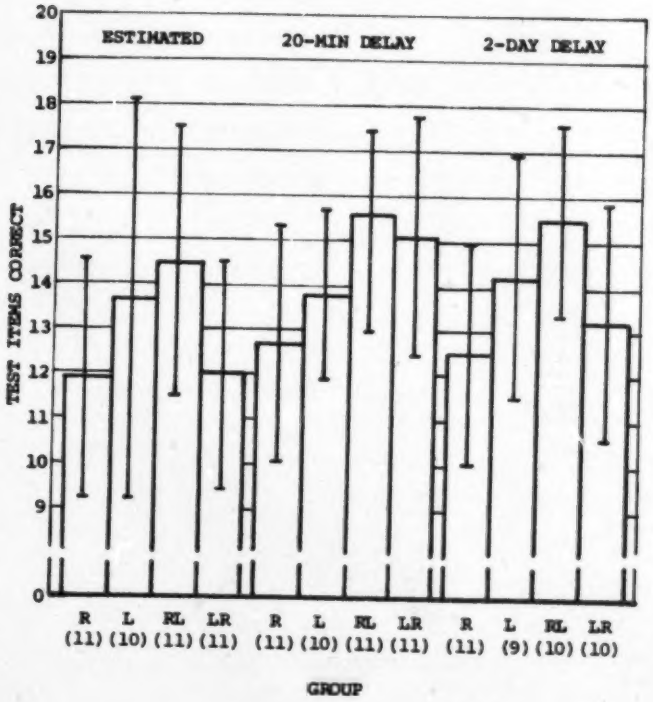


Fig. 1. Group means and standard deviations of students' estimated and actual test scores. The number of scores on which each mean is based is shown in parentheses.

and a 2-day delay.

Results: Figure 1 shows the group means and standard deviations of the students' estimated and actual test scores. Data relating to the estimated scores, 20-minute delay scores, and 2-day delay scores were analyzed separately by means of an analysis of variance, performed on the orthogonal planned comparisons generated by the three experimental hypotheses.

Estimated Scores: Table 2 summarizes the effects of the various treatment conditions on the estimated scores.

Table 2

Planned Comparisons of Estimated Scores

| Contrast | t-value | df. | prob. |
|---|---|---|---|
| $H_1$: Sequence Effect | 1.78 | 39 | N.S. |
| $H_2$: Modality Effect | -1.26 | 39 | N.S. |
| $H_3$: Exposure Effect | .428 | 39 | N.S. |
| (F = 1.66, df = 3.39, N.S.) | | | |

Although there were no significant effects, and therefore none of the three hypotheses were rejected, it is interesting to note from Figure 1 that the pattern of estimations tended to coincide with the obtained scores.

20-Minute Delay: Examination of Table 3 reveals that the omnibus F was significant for the 20-minute delay data, and that the major contribution was the exposure effect.

Subjects receiving two forms of input (Lecture and Read) did significantly better than subjects receiving only one. The other two effects were not significant.

2-Day Delay: A similar analysis of the 2-day delay data is summarized in Table 4. The omnibus F-test was significant, and it can be seen that there was a significant sequence effect. When tested after 2 days, subjects who had read prior to the lecture scored significantly better than subjects who read after the lecture. The other two effects were not significant.

Table 3

Planned Comparisons of 20-Minute Delay Scores

| Contrast | | t-value | df. | prob. |
|---|---|---|---|---|
| $H_1$: | Sequence Effect | .654 | 39 | N.S. |
| $H_2$: | Modality Effect | -1.076 | 39 | N.S. |
| $H_3$: | Exposure Effect | 3.082 | 39 | p .05 |

(F = 3.77, df. = 3.39, p .05)

Table 4

Planned Comparisons of 48 Hour Delay Scores

| Contrast | | t-value | df. | prob. |
|---|---|---|---|---|
| $H_1$: | Sequence Effect | 2.06 | 36 | p .05 |
| $H_2$: | Modality Effect | -1.575 | 36 | N.S. |
| $H_3$: | Exposure Effect | 1.278 | 36 | N.S. |

Repeated Measures: A comparison of the 20-minute delay and 2-day delay scores within each treatment condition revealed a significant decrease in performance for group L-R. ($t_{dep}$ = 3.25, df = 9, p .01). No other repeated measure differences were significant.

Discussion: There are three statistically significant findings of this study:

1. Students who both read the essay and heard the lecture performed better on the 20-minute delay examination than students who were exposed to the material in just one form.

2. When tested after a 2-day time period had elapsed, students who had read the material before they heard the lecture performed better on the examination.

3. Examination performance of students who heard the lecture before reading the material declined from the first to the second testing, whereas performance of the other groups did not decline.

The first effect is easily understood in terms of time of contact with the academic material and the mutual reinforcement of reading and lecture, regardless of order. Since those who got both reading and lecture did better than those who got one or the other, teachers should use this information to support their own urgings of students to attend class and read the assignments, emphasizing that this will lead to higher scores on examinations.

The second effect is not quite so clear-cut and must

be examined further to account for its significance. The reading and study skills authorities quoted in Appendix 1 suggest various motivations for reading the assignments before going to lecture. One, however, occurs more frequently than the others, and that is that reading the material before hearing the lecture enables the student to take better notes. This may be a factor in the result of the study, since students were allowed to take lecture notes and could have reviewed them, although they were not told they would be tested on the materials during the next class. The results may suggest, however, that when the testing is immediate, a review of notes is not a factor regardless of the read-lecture order. However, it is possible that in the delayed testing, those who first read then heard the lecture were, in fact, able to take better notes, and this may contribute to the higher test scores of the group. This is an area where further research should be pursued.

The third finding may be interpreted as showing that, for students who heard the lecture first, retention of the material declined to the level of those students having only one exposure to the material. It may be that, when reading material which has been previously presented in lecture, students read less actively, recognizing the material as familiar but not attempting to encode it. As a consequence, retention over a long period of time declines more rapidly than it would if active encoding while reading precedes exposure to the material in lecture form.

The results of this study have important implications for teachers, especially those who teach remedial students.

1. You now have some "hard" evidence to support your urgings that students read assignments before attending lectures. Students will accept "evidence" from teachers more readily than they will accept "good advice" that is unsupported by scientific data.

2. Reading and Study Skills teachers, or content area teachers working with remedial students, might find it beneficial to go over the student's assignments with him/her orally to check comprehension of the main points of the reading before the student attends class lecture. This should improve the student's comprehension of the ideas to be covered in the lecture and perhaps enable the student to take better notes.

3. Teachers working with remedial students should make a conscious effort to use both unputs (reading and lecture) to convey information to their students, since the double exposure resulted in higher test scores regardless of order, than did just one avenue of receiving the information.

This has several possible applications to classroom practice:

a. Lecture should cover the same material as the text and in the same order.

b. When introducing new material that is not found in the text, provide the students with a written handout to reinforce through reading the information they will hear in class lecture.

c. For some lectures, especially early in the term for those which will cover particularly difficult or complicated material, provide the students with a brief outline of the main topics to be covered in the lecture and ask them to fill in the details as you talk.

d. In literature courses, whenever possible, reinforce reading assignments with records or tapes of the material. Caedmon/Records Tapes or your own tapes may be used. This is also a great help for students with reading deficiencies, as they can hear the words being spoken as they see them on the page and thus have two chances to recognize a new word.

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APPENDIX 1

The quotations below are taken from college reading and study skills text and represent a sampling of opinions on when assignments should be read in relation to class lectures.

"If you know you are going to hear an especially important lecture, take its topic and title and look over some library references dealing with the subject. Scan them to get some idea of what the lecturer might cover in his discussion. Carrying out your ordinary class assignment often will give you this preparation, but do get the picture of what is to be covered in the lecture so that your notes may be more intelligently organized as you take them. (Staton, 1968)."

"Read ahead in the text the night before class. Learn enough about the topic to understand what is important, which ideas are essential. Knowing this will help you evaluate the lecture and decide what is important, which ideas are essential. Knowing this will help you evaluate the lecture and decide what should be recorded. You may discover that the speaker often discusses matters covered well in the text. If so, you need not copy down his words; merely make a note beside the topic to see the text. (Spargo, 1971)."

In How To Study the authors do not say to read the assignment before going to lecture but presuppose that the student will do so: "If possible, before you go to class, think of questions based on your reading of the textbook assignments and on what the lecturer said last time. As soon as you are settled down in your chair, get your notebook ready and put your mind to work on what is going to happen in class. (Morgan and Deese, 1957)."

"The best preparation for a lecture is a survey of the assigned

reading (Smith, 1961)."

"Read your assignment before the class discussion . . . the material you have read will become more meaningful and will be remembered longer. Cramming for exams will be unnecessary (AAP pamphlet, 1974)."

# CHECK, CONVINCE, CONCLUDE

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Opening the doors to students never before qualified to attend college has been like opening Pandora's box at The City University of New York. One can assume that faculty were, more or less, aware that they would be faced with the problems of teaching students who were grossly deficient in basic skills. What seems to have been less anticipated was the student's resistance to learning and authority and the resultant inadequacy of teaching methods employed successfully with highly motivated and reverent students.

In a 1975 study of Bronx Community College dropouts (Office of Institutional Research, Bronx Community College, 1975), it was repeatedly found that low academic self-concept and resistance to conformity were two of the non-cognitive characteristics of dropouts. The report stated among its conclusions that this low academic self-concept may produce a circular pattern of low aspiration, low expectation of achievement and, in fact, underachievement which reinforces the initial poor self-concept. The report also emphasized that dropouts tend to be of an independent minded and dominating nature, impatient with restraints and discipline. "Such students are likely to resist domination, dislike a structured

environment and show impatience with restrictive rules and regulations. They are likely to be unhappy with teachers who expect their students to be submissive, and who prefer a formal and structured environment in the classroom."

The pedagogical challenge implied in these findings is particularly crucial for the reading and study skills instructor because students required to enroll in remedial courses tend to bear extensive histories of failure and resistance to learning. The reading instructor leads himself through an inevitable obstacle course of frustrations, recriminations and experimentations. Methods such as the developmental, lecture, contractual and program are tried and, more often than not, rejected because they allow only minimum opportunity for the student to realize his own ability to learn or participate with his peers in structuring the learning environment.

The lecture approach and the developmental method, as well, project the instructor as the center of attention and responsibility and result in his becoming the target of the student's resistance to learning and authority. After the first ten minutes of class, the instructor is faced with blank stares, yawns, mumbling, crunching of potato chips, rattling of newspapers, smells of nail polish and other signs of "conspicuous inattention." Too often this leads the instructor to

sink into the role of performer par excellence or policeman.

The contractual and individual program approach focuses on the relationship between the student and the reading material. It can be very effective with the highly motivated student, the mature student who has assumed responsibilities in the world and returns to school determined to take advantage of every opportunity. This method seems to work for the less motivated student for the first few weeks but when the novelty wears off, disenchantment sets in. He becomes bored and frustrated with commercial materials, which are not always well designed or of the appropriate interest level, desirous of the social interaction expected in a class situation and unsatisfied with the minimal attention the instructor is able to offer with a group of twenty students working on different programs or contracts.

Another promising area is group dynamics. The emphasis in this approach is on student interaction and peer teaching. It provides an informal atmosphere and promotes feelings of membership along with skills of shared influence and collaborative decision making. The problem is determining how much time spent on interaction techniques produces optimum academic results.

Research in reading methodology is unenlightening. Research comparing these various methods shows

contradictory results. Many studies show no significant difference in reading performance and very few studies have been based specifically on our unique population. Experiencing these pedagogical dilemmas as a college reading instructor has lead me to a way of structuring the learning experience which integrates elements of several methods and seems, for the moment, to be successful. The approach, which I call Check, Convince, Conclude, can be described in several steps.

The first step follows the developmental lesson format. The instructor introduces and models a skill to be taught and although the instructor may partially elicit the model through questioning, it is recognized that reliance on discovery is impractical in this situation. A skills activity is then required of each student since internalizing through individual experience is vital. This skills tasked may be individualized by assigning tasks at different levels of difficulty. The only limitation is that at least four individuals be working on a task at the same level.

When the individual activities are completed, students pair off with a partner working on the same level and check each other's work. If disagreement exists, they are asked to try to convince each other and come to a conclusion regarding the correct answer. Next, two pairs team-up and again work through the process of checking, convincing and concluding. Items

which cannot be resolved are circled for the final procedure in which the entire class and the instructor discuss unresolved problems and summarize the experience.

The instructor's role is to present the model and the task, structure the groups, guide them for one phase to the next and, during the time of peer interaction, serve as a resource person when assistance is requested. He should be very clear about each learning task and the steps in the procedure. As the need arises, he can provide opportunity for students to examine their own interactions and their feelings about the group process.

The Check, Convince, Conclude method incorporates modeling, individualized, pairing, small group and whole class experiences. Most importantly, the focus is on the student, not the instructor. The instructor may provide the initial model but the students are forced to depend on each other for checking their answers and this serves to spotlight their own powers of thinking, hopefully boosting academic self-confidence.

Students are also encouraged to interact. At least one direct communication must take place between two individuals. It is much more difficult to withdraw in a face to face situation with a peer than in a large class discussion. For the unsure student, the security of sharing his ideas with one person may lead to enough self-confidence to interact in a slightly larger group.

For the instructor, it is an immense relief not to feel the need to get and keep every student's attention and not to be the object upon which resistance is focused. He can relegate the policeman's badge and the clown hat to the attic and begin once again to help students ask the right questions.

Student reaction seems to favor this approach. One student wrote about the Check, Convince, Conclude method of her reading and study skills class in a psychology paper: "In a cohesive group as ours where the members experience strong feeling of togetherness, and responsibility toward one another, the task functions are initiated so that everyone can participate. The type of assignment helps to make members of our group more cohesive."

There are problems. Our students are often as unequipped to interact constructively in a problem solving situation as they are deficient in academic skills. Antagonistic pulls between production goals and student feelings may arise. Time may often be wasted on digressions and individual conflicts may impede achievement goals. Even when a group achieves cohesion, academic performance may be very high or very low depending on the group's shared attitudes toward learning. It has been found (Schmuch and Schmuck, 1975) that high cohesion means simply that students are more susceptible to interpersonal influence than usual. The

direction of influence depends on the group's norms.

While very real disadvantages do exist, they can be worked on, and, for the moment, the benefits outweigh the problems. Any multi-remedial educational problem must involve choosing among alternative needs, and these days at CUNY it is imperative that methods which support self-confidence and individual autonomy be given top priority.

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# ACCOUNTABILITY ASSESSMENT FOR DEVELOPMENTAL EDUCATION

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In a time when evaluation and its bedfellow, accountability, are being spotlighted, we in developmental education programs need to validate our program's usefulness as clearly as possible. It's all very well for members of the clan to talk of "The students we saved from going on probation," the ones "Who learned to study and were able to move up on the ladder of grade point averages," and of those "Who had no ears to hear." However, funding monitors are wanting something more definite upon which to base their allotments than our well-founded convictions that we're playing our way because of the students we've rescued.

One way to indicate accountability is to examine the grade-point scale of the students with whom we have worked. A question basic to such an examination is, "How do we establish the base from which we say the student moved?", "Where do we say the student started?" On older students we would have some previously established grade-point average but for the newer students such a reference base is not available.

A reasonable tool for supplying this base is inherent in the basic test scores which almost all students have as part of their entrance records. Either the College Board scores or the ACT data is changeable into prognosis scores (grades) if one will make use of the manuals provided with such data. We can convert the overall scholastic aptitude score into a prognostic grade-point (predictor) of generalized achievement; or, in the case of the ACT, where we are supplied sectional scores, we can predict subject grades. A rough translation of the scores into predictive grade-points is provided in the following table.

TABLE I

Normalized Correspondence Between
Scholastic Aptitude Scores & Grade-Point Average

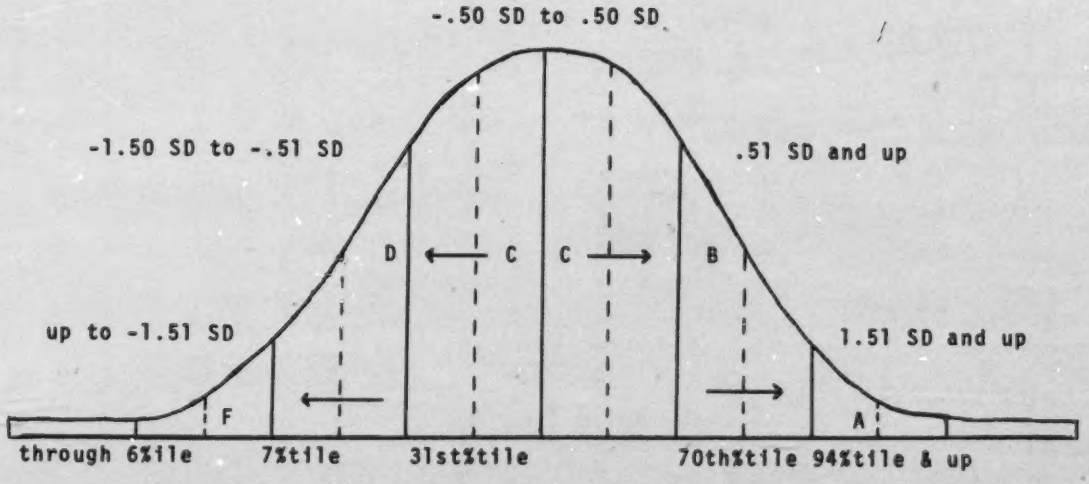
| Grade | Approximate Standard Deviation Limits | Corresponding Percentile Limits |
|---|---|---|
| A | 1.51 SD and up | 94 %ile and up |
| B | From .51 SD to 1.50 SD | 70th to 93rd %ile |
| C | From -.50 SD to .50 SD | 31st to 69th %ile |
| D | From -1.50 SD to -.51 SD | 7th to 30th %ile |
| F | Up to -1.51 SD | Up thru the 6th %ile |

Translating the information from Table 1 into the bell curve we have Figure 1.

By using Table II it is possible to take the ACT score for a student and predict a grade-point estimate in a given subject. As an example, suppose a student scored a 14 on the English section of the ACT exam. By looking at Table II we can see that this student's grade-point predictor in English will be a D. To take a second example, suppose a student scored 21 on the Social Science section of the ACT exam and is taking a sociology course. His grade-point predictor would be a C. Similarly we could use the College Board scores.

For the practical assessment of measuring progress over a given term, or for a given subject, a straight forward comparison of the predicted GPA against actual achieved GPA ought to supply a ready count of those who gained ground and of their degree of gain.

One ever-present danger in this method of handling the data will lie with instructors who become aware of your prognostic assessment and will get an ill-founded idea that the prognostic grade is the grade the student ought to be able to earn - the best that the student ought to be able to accomplish - and will base their grading upon this prediction. From time to time such simplistic interpretations of students




Applying this data to the ACT data we arrive at the following table.

TABLE II

GRADE-POINT PREDICTORS

ACT AND CEEB*

| Percentiles | | ACT | | | | | CEEB |
|---|---|---|---|---|---|---|---|
| | | English Scores | Math Scores | Social Science Scores | Nat. Science Scores | Cum Scores | Verbal and Quantitative |
| 89— | A | 26— | 29— | 27— | 29— | 27— | 650— |
| 70 - 88 | B | 22 - 25 | 24 - 28 | 24 - 26 | 25 - 28 | 23 - 26 | 550 - 649 |
| 31 - 69 | C | 18 - 21 | 15 - 23 | 19 - 23 | 17 - 24 | 16 - 22 | 450 - 549 |
| 10 - 30 | D | 12 - 17 | 10 - 14 | 8 - 14 | 12 - 23 | 12 - 15 | 350 - 449 |
| 0 - 9 | F | —11 | —9 | —7 | —11 | —11 | —349 |

*CEEB indicates the College Entrance Examination Board or SAT

have been made by faculty members who totally ignore student motivation and resolve. The results of such judgments have been and could not be less than detrimental to students so prejudged. No one, student or non-student, ought to be confined by some estimate of his past accomplishment, for that is what an ACT, or College Board score represents - a minimum score which was earned on a given test experience. It is not a lid on the student's potential; it's simply a score he did earn on a given day; it's a base, a minimum. It would certainly be better for us to have never tried to qualify our data, if in the process we're going to hamstring the very students about whom we are so concerned. Another noose around his neck is the last thing the student needs. So we must be cautious. We'll work up our data overall, not per student, as far as our colleagues are concerned. We'll protect the individual as we supply our quantified data in support of our accountability. And, in the process, we will have some concrete evidence of developmental education's accomplishment.

# THE NELSON-DENNY READING TEST AS A PREDICTOR OF COMMUNITY COLLEGE ENGLISH AND PSYCHOLOGY GRADES

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Since the Virginia Community College System (VCCS) was founded in 1966, it has espoused an open door admissions policy. In an attempt to prevent the open door from becoming a revolving door, most of the colleges in the VCCS have used reading tests of one form or another. These tests are used in the VCCS variously for academic counseling and placement. Foster pooled all 23 colleges of the VCCS about their use of reading tests as predictors for course achievement, none of them responded with evidence directly supporting the validity of this application. More than 7,700 reading tests were administered in the VCCS in the Academic year 1975-76; of these, more than 7,100 were the Nelson-Denny Reading Test.

Given the volume of use and the absence of local validating data, the present project was designed to examine the predictive validity of the Nelson-Denny Reading Test in the VCCS.

The null hypotheses are as follows:

Course grades are not significantly correlated with Nelson-Denny Raw:

1) Vocabulary Scores
2) Comprehension Scores
3) Reading Rates

## PROCEDURE

Subjects - The subjects were students at Blue Ridge Community College who were enrolled in English 101, English 102, English 111, English 112, Psychology 201, Psychology 202 or Psychology 203 during the academic year 1975-76. English 101 and 102 are freshman nontransfer courses; the other are freshman and sophomore college transfer courses. All courses are on a quarter system.

Method - The Nelson-Denny Reading Test (Form A) was administered to all students in each of the seven courses present on the day of administration. At the conclusion of the Fall, WInter and Spring quarters, alphabetic grades for those students were assembled.

The .001 level of significance was selected for hypothesis testing.

## RESULTS

Table 1 gives the means and standard deviations of the Nelson-Denny scores and grades. Grades are shown as transformed (A = 4, B = 3, C = 2, D = 1, F = 0). Table 1 includes only students for whom both grade and Nelson-Denny scores were available. Students who withdrew from the course were excluded from the data.

Table 2 contains the product-moment correlations between Nelson-Denny scores andgrades.

Hypotheses 1 and 2 are rejected. (Table 2) The seven vocabulary score correlations and six of the seven comprehension score correlations are direct and significant. (p .001) Hypothesis 3 is not consistently contradicted by the data.

## DISCUSSION

The results indicate that Nelson-Denny Raw Vocabulary and Raw Comprehension scores correlated positively with final grades in transfer and nontransfer English and general Psychology courses in a community college setting. Predictions should be made with caution, however, for two reasons: 1) substantial proportions (49.6 to 90.4 percent) of the variances were not accounted for by the Nelson-Denny, and 2) the subjects in this study had all signed up for the courses prior to testing, so to some extent self-selection may have biased the extent to which the data may be generalized to other groups. However, it is not immediately apparent how to test the hypotheses without compromising student's rights or admitting some possibility of bias due to self-selection. The major bias due to self-selection probably resulted in the exclusion of some students at the very low end of the Nelson-Denny distribution who might be prone to sign up for "developmental" courses rather than these courses. In our judgment such bias is unlikely to have had significant impact on the results and in no way

limits the correlations achieved for the specific groups described in this study.

Note that the correlations are generally higher for Psychology than for English. This result may be accounted for if the course content is considered. Seemingly, the more reliance the course places on reading, the higher should be the correlation between reading test scores and grades. The English courses considered in this paper are primarily composition courses; reading assignments assume a subordinate role. In contrast, the three-quarter psychology sequence demands comprehension of a major textbook from which most test material is gleaned. Further, the Psychology 201 correlations are higher than the corresponding Psychology 202 and 203 correlations. Successful performance in Psychology 201 is particularly dependent on reading text; 202 and 203 involve a multimedia approach (tapes, films, discussions) to a far greater extent than does 201. This indicates that the Nelson-Denny predicts course grades to the extent that course content is gleaned by reading.

## CONCLUSION

Nelson-Denny Reading Test Raw Vocabulary and Raw Comprehension scores are predictors of student grades in Community College English and Psychology courses. Nelson-Denny Rate scores do not serve as useful predictors. The power of the Nelson-Denny as a predictor appears dependent on the degree to which reading is dominant in the instant course.

TABLE 1. Means and Standard Deviation of Nelson-Denny Scores and Grades.

| COURSE | N | Grades | Vocabulary | Comprehension | Rate |
|---|---|---|---|---|---|
| ENGL 101 | 176 | 2.6 ± 1.0 | 30.8 ± 11.9 | 38.4 ± 12.2 | 236.4 ± 76.2 |
| ENGL 102 | 128 | 2.8 ± 1.1 | 31.6 ± 11.6 | 39.5 ± 11.8 | 241.6 ± 73.3 |
| ENGL 111 | 177 | 2.6 ± 1.0 | 33.5 ± 11.4 | 40.1 ± 11.0 | 226.0 ± 79.7 |
| ENGL 112 | 136 | 2.7 ± 1.0 | 33.7 ± 11.8 | 40.6 ± 11.0 | 224.4 ± 77.2 |
| PSYC 201 | 61 | 2.4 ± 1.3 | 35.4 ± 12.2 | 42.6 ± 11.8 | 276.2 ± 75.7 |
| PSYC 202 | 69 | 2.6 ± 1.3 | 36.3 ± 12.4 | 43.3 ± 11.8 | 280.5 ± 74.3 |
| PSYC 203 | 69 | 2.8 ± 1.1 | 36.5 ± 11.9 | 43.7 ± 10.7 | 296.4 ± 92.5 |

TABLE 2. Correlations between grades and vocabulary, comprehension and rate scores.

| COURSE | N | Vocabulary | Comprehension | Rate |
|---|---|---|---|---|
| ENGL 101 | 176 | .31* | .34* | .22 |
| ENGL 102 | 128 | .31* | .26 | .25 |
| ENGL 111 | 177 | .43* | .27* | .06 |
| ENGL 112 | 136 | .38* | .36* | -.02 |
| PSYC 201 | 61 | .74* | .61* | .48* |
| PSYC 202 | 69 | .51* | .47* | .30 |
| PSYC 203 | 69 | .45* | .46* | .04 |

*$p < .001$



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# THE TRAINING AND USE OF READING PARAPROFESSIONALS IN THE COMMUNITY COLLEGE

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After several years of university training of paraprofessionals for governmental and social agencies, the Concentrated Employment Program (The Economic Opportunity Planning Association of Greater Toledo) discussed with the University of Toledo the possibility of its Community and Technical College becoming a "user agency" of trained paraprofessionals. The Community and Technical College was asked, "Why couldn't you use paraprofessionals in your instructional program?" Therefore, in 1970 the college embarked upon an experimental project to train paraprofessionals for its own use in the following capacities:

Library/Media
Personnel/Advisor
Laboratory Technician - reading
Laboratory Technician - science
Instructor Technician - math
Administrative Technician

To determine potential for success, the Toledo Concentrated Employment Program interviewed prospective candidates and administered aptitude tests; the academic placement tests. Initially, 9 individuals, each of whom was undereducated, were selected for training.

Training included carrying a full academic load (12 hour minimum) at the University Community and Technical College. The major field of study was determined by aptitude test results and personal choice. Under the supervision of the instructor responsible for each lab or work area, the student trainee received twenty hours per week of on-the-job training.

Concurrent with the general training of all paraprofessionals, there

was a major change in utilization of the reading laboratory. Rather than assigning developmental reading classes to a fixed time slot for laboratory practice, as had been the case, the reading lab (along with the biology lab) was designated an "open" lab. The student could develop individual skills at a time of his own choice. It was no longer necessary that an instructor be present, though each instructor was required to specify "lab hours" when he would be there. The instructor could follow the student's work via periodic written or oral communication. Each student received an individualized program based upon results of the diagnostic California Reading Test and a teacher-made inventory. The paraprofessionals assisted the students in the absence of an instructor.

Since it was essential that the two paraprofessionals assigned to the reading lab be familiar with what was expected of the student enrolled in the developmental reading course, this course is designed as a "competency-based course with a passing competency of grade 11 equivalency." It carries one academic credit and a pass/no credit grade, so that students with very weak reading skills may continue to upgrade their skills in succeeding quarters without penalty.

During the first year of training, the paraprofessionals spent a significant proportion of their time developing their own reading skills. A major benefit of this experience was a familiarization with materials and equipment. Another important facet of the first year's training was an emphasis upon such clerical duties as filing, record keeping, inventory control, and the notification of media services if equipment were not functioning properly. Interview techniques were developed so that paraprofessionals could properly question a student seeking help and schedule appointments with instructors.

During the second year of training the paraprofessional learned to administer group and individual reading tests: the Nelson-Denny Reading Test for initial freshman screening; the California Reading Test for classroom diagnosis; and placement tests such as the McGraw-Hill Basic Skills series and the SRA's Reading for Understanding. The paraprofessionals also practiced giving the Keystone Telebinocular Screening Test to one another and to instructors until they felt confident in administering it to students.

Unique to the experience of the two trainees in the reading laboratory was course work completed in the College of Education's Department of Secondary Education. This course work came near the end of their associate degree program. In conjunction with this course work, the paraprofessionals were exposed to other reading labs both at the secondary and college levels. The cooperation with the College of Education heightened the trainee's sensitivity to the general field of education and to the problems specific to the area of reading. Because of their initial success, the reading trainees each completed an additional course at the College of Education in the use of educational media.

Toward the conclusion of the two year project, it was the responsibility of each supervising teacher to write a paraprofessional job description, in cooperation with the Dean of Instruction and the Director of Personnel. Once the trainees received associate degrees, they were invited to join the full-time staff of the university. All project paraprofessionals were classified initially as Laboratory Technicians I by the Civil Service.

Since the original inception of the project, paraprofessional positions have been added to the typing/business machines lab and to the Counseling Center. Seven of the original nine trainees are currently

Civil Service employees of the university, functioning as paraprofessionals. A new group of trainees is currently being trained for additional paraprofessional positions at the University.

That the project was a success, there is no doubt. Labs are open 35-45 hours per week, with the student choosing his own hours to complete assignments and develop necessary skills. The teacher may now concentrate his energies on the student who needs personal instruction in basic skills. It has been possible to help many more reading students through the use of paraprofessionals.

Although the stimulus for this program came from a question asked by the local Concentrated Employment Agency, it is a question that should be answered by ALL community colleges. The use of paraprofessionals in the elementary and secondary school has been promoted for some time; however, the national I.R.A. has issued a call for the training and use of paraprofessionals at all educational levels. Community colleges must respond.

Book Review: Surviving In College, David J. Yarington, 159pp. Bobbs-Merrill Educational Pub. 1977

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A good sub-title for this new, unorthodox book would have been "Everything You Wanted To Know About Surviving In College But Were Afraid To Ask." Yarington, the author, addresses himself to important, realistic factors related to success in college which most writers and/or publishers have been reluctant to discuss. College students, he says, "find classroom experiences to be dull, if not negative." College professors use the pidum as a barrier to "hide behind and lean on." He describes speed reading programs as a "fraud" and states that "No one has ever made better grades as a result of knowing how to speed read." On learning he offers, "Teachers and society in general have put reading on a pedestal as if it is the only way to learn." He tells the reader not to believe the "old wives tale" that one must study 45 hours per week. One way to change the system, he says, is to "con the professor." He acknowledges the fact that sex and drugs play a significant role in the lives of some students. But these out-of-context examples do not adequately represent the contents of this innovative book on college reading and study skills.

Given the plethora of books already available in this area, why would a publisher want to add another? The reason is that this book is quite different from the others.

It does not include reading selections followed by multiple choice questions. It does not provide still another discussion of SQ3R. The author does not lecture to students about placing their lamps in the proper position when reading or getting enough sleep the night before taking a final examination. To be sure the traditional topics are covered, but with a new approach. The topics include speed reading, motivation, time schedules, concentration, vocabulary building, listening, note-taking, examinations and the like.

Each chapter includes a statement of "The Real World", a brief incident which describes a student who does not have the skills discussed in the chapter. Many students will immediately relate to the world Yarington describes. A section on "Clarifying Where You Stand" follows. This section helps the student to discover how he feels about the skill. What is described as the "meat of the chapter"- the "Self Instruction" section - follows. This includes: a statement of the skill; a behaviorally stated goal for the student; alternative ways to learn the skill, both the understanding and application of it; a criteria to evaluate mastery of the skill; a brief discussion of the skill by the author; and comments on how a student might change the system.

Yarington does not believe all chapters should be read by all students. Selection should be based on needs as diagnosed by standardized reading tests, which he believes

students should correct themselves, and by completing the Yarington Study/Learning Style Inventory. (Much lip service has been given to the idea of identifying learning styles, but in practice little has been done to help students to actually discover how they learn best. Although Yarington presents reliability and validity data for the YS/LSI, each instructor will have to decide for himself just how useful and practical the Inventory is.)

Yarington also includes chapters rarely found in the typical book of this type. The chpater on "Finding Out About Yourself," "Being Human," and "Old-Fashioned Classrooms" all include creative and interesting games which help students to clarify and to re-evaluate where they stand in relation to surviving in college. These chapters are refreshing and, I believe, very valuable. The teacher's manual also contains similar type activities.

A student will not learn how to "survive in college" by using this book only. The instructor should have available some of the books mentioned in the self-instruction sections. If only one other book can be purchased, Yarington highly recommends Walter Pauk's How To Study In College. The sections cited in the various books were specifically recommended by students as being "relevant and no-nonsense." (Some of my personal favorites are not mentioned, such as the materials published by the College Skills Center.)

The book has some minor shortcomings. I question the

value and practicality of some of the suggestions in the sections on "Ways of Learning from Lectures and Discussions." I don't believe the chapter sub-sections on "Changing the System" will have much impact. To carry out Yarington's recommendations for changing system, students must be assertive and aggressive. These are personality characteristics rarely displayed by the typical student who enrolls in college reading and study skills courses. In his teacher's manual, Yarington refers to the book's preface. My copy of the book does not contain a preface. Finally, I believe the McGraw-Hill Basic Skills System tests are far superior to those suggested in the book.

After ten years of teaching and conducting research on college reading and study skills courses, I have begun to question their value. Too many students who participate in these courses do not significantly imporve their grade poin point average. In short, many of the courses are not relevant. But Surviving In College is relevant. The author approaches his topic candidly and humanistically. The chapters get right to the point. There are some viable alternatives for learning and applying the skills. I believe, under the guidance of a skillful teacher, students who use this book will feel more positive about themselves and what they need to do in order to survive in college. Perhaps students will in fact improve their grade point average. But only research will substantiate this. If it does, the book may become a classic in the field like its recommended

companion volume How To Study In College.

One last note - if you don't want to read the book, please read the cover. Like the book's contents, its cover is novel. Melissa Martin Goldsmith's design, a take-off on the game of Monopoly, is a delight. Maybe one can judge a book by its cover after all.



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